Name: Date: Period:

**Ecology Unit**

**Environment** =

**What’s in an environment?**

* **Abiotic factors** – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ parts of the environment
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* **Biotic factors** = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ parts of the environment

**Levels of Organization within the environment**

* **Organism** – one \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + prairie dog
* **Population** -- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the same species in a particular \_\_\_\_\_\_\_\_\_\_\_\_ at a particular \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Prairie dogs in Africa during the monsoon of 2002
* **Community** – all the different \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ living together in a particular \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at a particular \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Prairie dogs, buffalo, antelope, and grass in Africa, 2002
* **Ecosystem** – combination of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ factors
  + Prairie dogs, buffalo, antelope, and grass in Africa during the monsoon of 2002, along with rocks.

**Examples of Ecosystems:**

1. Terrestrial (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) –
2. Freshwater –
3. Marine –

**Wetland** – link between \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* + 1. Area \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with water for part of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    2. Examples = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    3. Importance = provide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ water, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and hold floodwaters, prevent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ wind, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Changes in Communities**

* Succession – predictable \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a community over \_\_\_\_\_\_\_\_\_\_
  + Primary – series of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that occur in an area where no \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ exist
    - Retreated glacial, after volcanic eruption
  + Secondary – series of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that occur in an area where \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and/or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ exist
    - Natural disasters or human interactions (logging, farming)

**Ecology** = study of how \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ interact with each other and their \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Population density** = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ living in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ area

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rate
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rate
* **immigration** – new members \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* **emigration** – members of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + **limiting factors** -- factors that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from reaching its full \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Interactions among living things:**

* **Adaptations --** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and physical \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ allowing organisms to live \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in their \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* **Niche --** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of organism in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or how it makes its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + **Examples:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ it eats, how it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ its food, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, physical conditions it requires to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* **Competition** -- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with similar \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ contend for the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + **Example**:
* **Predation** – 1 organism (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) \_\_\_\_\_\_\_\_\_\_\_\_\_ another organism (\_\_\_\_\_\_\_\_\_\_\_\_\_) for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + **Defense strategies**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ covering, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ coloring, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ coloring
  + **Example**:
* **Symbiosis** – close \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ between 2 species that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at least 1
  + **Mutualism** -- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ species \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    - **Example**:
  + **Commensalism** -- \_\_\_ species \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the other is not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    - **Example**:
  + **Parasitism** – 1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ living on or \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) another organism (\_\_\_\_\_\_\_\_\_\_\_\_\_) and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ it
    - **Example**:

Name: Date: Period:

**Ecology Unit KEY**

**Environment** = Surroundings

**What’s in an environment?**

* **Abiotic factors** – nonliving parts of the environment
  + water, sunlight, oxygen, temperature, and soil
* **Biotic factors** = living parts of the environment

**Levels of Organization within the environment**

* **Organism** – one organism
  + prairie dog
* **Population** -- organisms of the same species in a particular area at a particular time
  + Prairie dogs in Africa during the monsoon of 2002
* **Community** – all the different populations living together in a particular area at a particular time
  + Prairie dogs, buffalo, antelope, and grass in Africa, 2002
* **Ecosystem** – combination of the communities and the abiotic factors
  + Prairie dogs, buffalo, antelope, and grass in Africa during the monsoon of 2002, with rocks

**Examples of Ecosystems:**

1. Terrestrial (land) – rain forests, deserts, grasslands, forests, tundra, mountains
2. Freshwater – streams, rivers, ponds, and lakes
3. Marine – estuaries, intertidal zones, neritic zones, open ocean

**Wetland** – link between land and water

* + 1. Area filled or soaked with water for part of the year
    2. Examples = swamp, marsh, and bog
    3. Importance = provide habitat, filter water, collect and hold floodwaters, prevent erosion, absorb wind, beauty, and recreation

**Changes in Communities**

* Succession – predictable changes in a community over time
  + Primary – series of changes that occur in an area where no soil or organisms exist
    - Retreated glacial, after volcanic eruption
  + Secondary – series of changes that occur in an area where soil and/or organisms exist
    - Natural disasters or human interactions (logging, farming)

**Ecology** = study of how organisms interact with each other and their environment

**Population density** = number of organisms living in a defined area

* birth rate
* death rate
* **immigration** – new members joining a population; increases
* **emigration** – members of a population leave; decreases
  + **limiting factors** -- factors that prevent a population from reaching its full potential
    - food, water, shelter, and space

**Interactions among living things:**

* **Adaptations --** behaviors and physical characteristics allowing organisms to live successfully in their environment
* **Niche --** role of organism in habitat or how it makes its living
  + **Examples:** food it eats, how it obtains its food, reproduction, physical conditions it requires to survive
* **Competition** -- organisms with similar requirements contend for the same resources
  + **Example**: pair of eagles flying towards a mouse
* **Predation** – 1 organism (predator) kills another organism (host) for food
  + **Defense strategies**: mimicry, protective covering, false coloring, and warning coloring
  + **Example**: lion hunting zebra
* **Symbiosis** – close relationship between 2 species that benefits at least 1
  + **Mutualism** -- both species benefit
    - **Example**: bumblebee and flower
  + **Commensalism** -- 1 species benefits and the other is not harmed or helped
    - **Example:** Barnacles on the skin of a whale
  + **Parasitism** – 1 organism living on or inside (parasite) another organism (host) and harms it
    - **Example**: Fleas on dogs